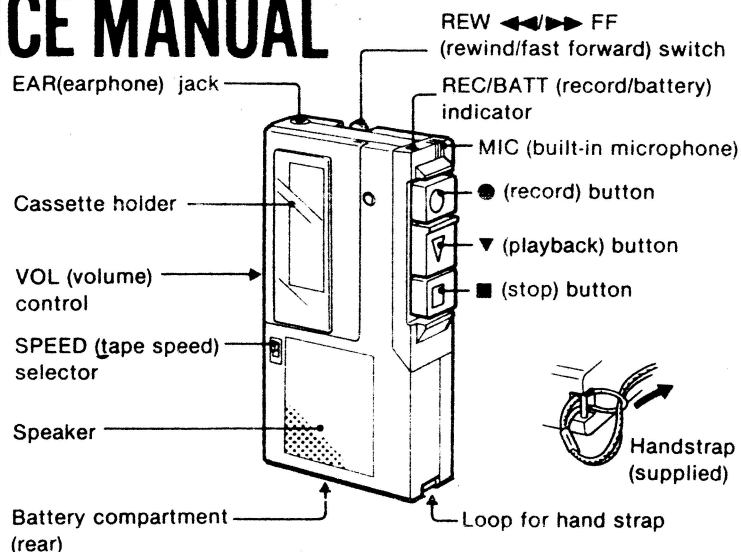
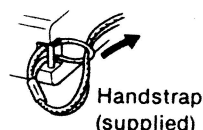


M-5

SERVICE MANUAL



*US Model
Canadian Model
AEP Model
UK Model
E Model*



SPECIFICATIONS

Tape Transport Mechanism Type MZ-5-99

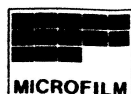
Tape	MICROCASSETTE™	
Recording system	2-track 1-channel monaural	
Speaker	Approx. 3.6cm (1 1/8 inches) dia	
Tape winding time	Approx. 3 min. (at 2.4 cm/s) Approx. 4 min. (at 1.2 cm/s) with Sony Microcassette MC-60	
Tape speed	2.4 cm/s (15/16 ips) 1.2 cm/s (15/32 ips)	
Frequency response	200-5,000 Hz (at 2.4 cm position) 200-3,000 Hz (at 1.2 cm position)	
Output	Earphone jack (minijack) for 8-300 ohm earphone or load impedance 10 kilohms or higher	
Power output	200mW (at 10% harmonic distortion)	
Battery life	(hours)	

	recording	playback
Eveready No. 1215 Heavy Duty batteries	6	6
Eveready No. E91 alkaline batteries	11	10

Power requirement	3V dc, two size AA (IEC designation R6) batteries
Dimensions	Approx. 60×112×24.5 mm (w/h/d) (2 3/8 × 4 1/2 × 1 1/32 inches) not incl. projecting parts and controls Approx. 65.5×113.3×25 mm (w/h/d) (2 5/8 × 4 1/2 × 1 inches) incl. projecting parts and controls
Weight	Approx. 200g (7 oz) incl. batteries

FEATURES

- The extremely compact size permits easy one hand operation with ultimate recording simplicity—merely insert a cassette and depress a single button.
- The tape speed selector allows you to double the normal recording time.
- SONY-MATIC recording system automatically adjusts and maintains a proper recording level.
- Automatic shut-off mechanism activates at the end of the tape in either the record or playback mode.
- Built-in electret condenser microphone for picking up sound with true fidelity.



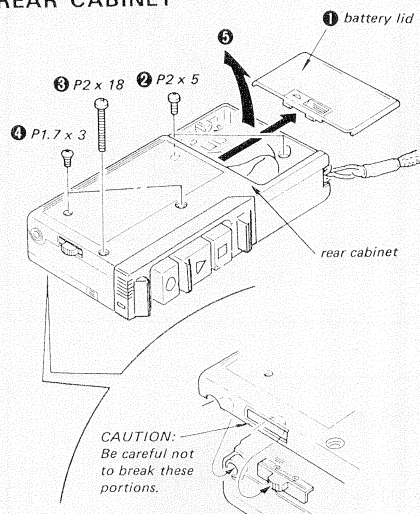
MICROCASSETTE-CORDER SONY®

TC

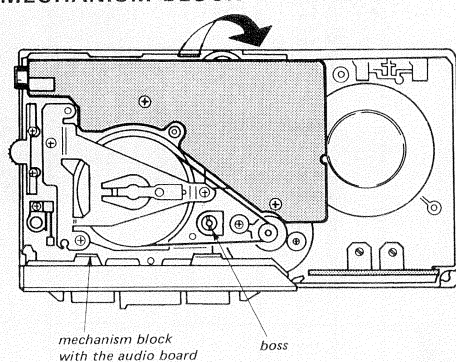
SECTION 1 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

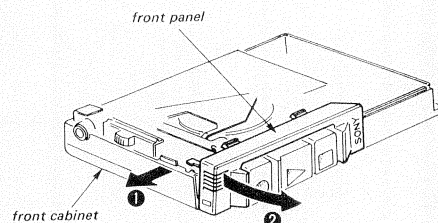
REAR CABINET



MECHANISM BLOCK

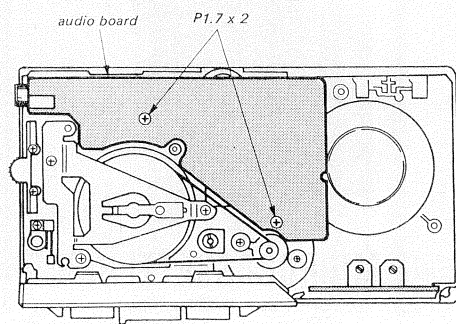


FRONT PANEL

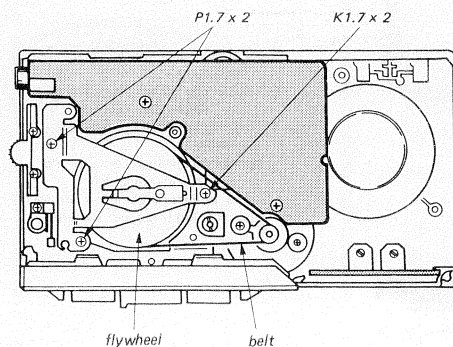


Remove the front panel as shown by the arrow 2, forcing open the front cabinet in the direction of arrow 1.

AUDIO BOARD

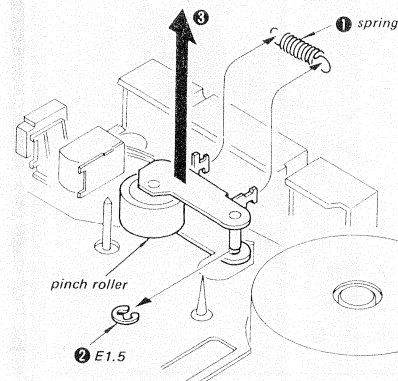


FLYWHEEL AND BELT

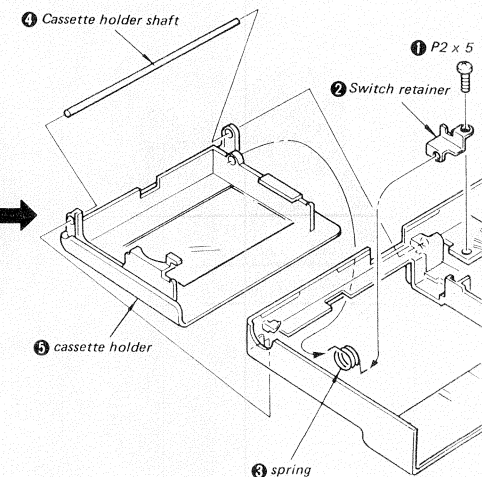


MOTOR REPLACEMENT

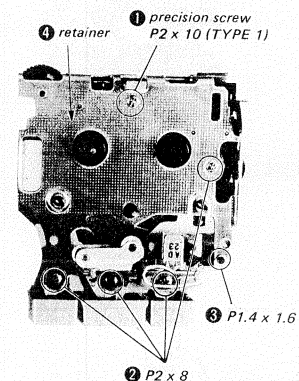
PINCH ROLLER



CASSETTE HOLDER



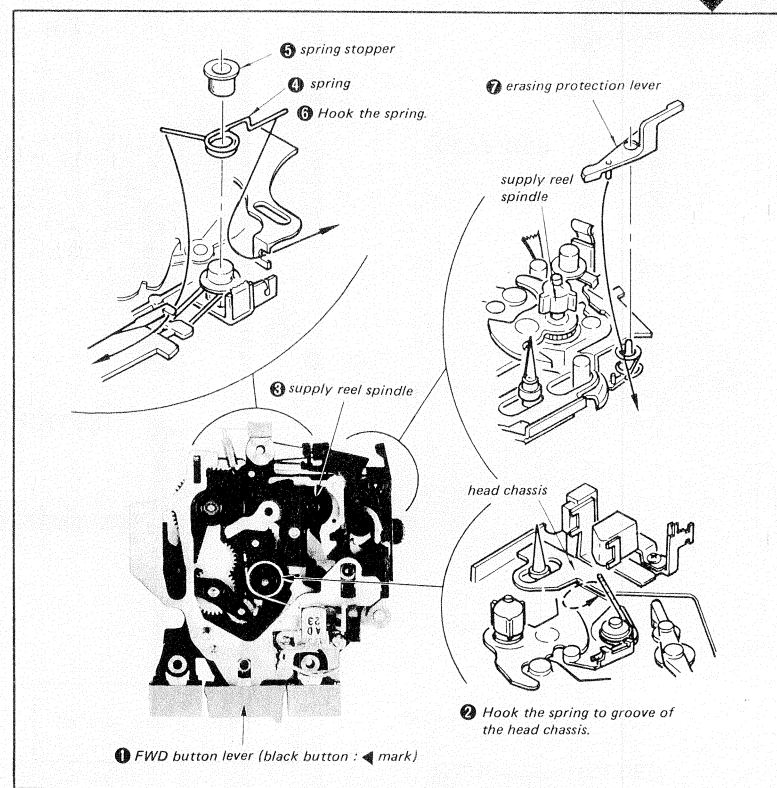
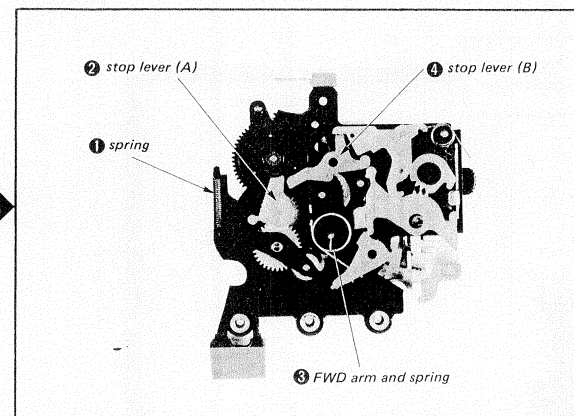
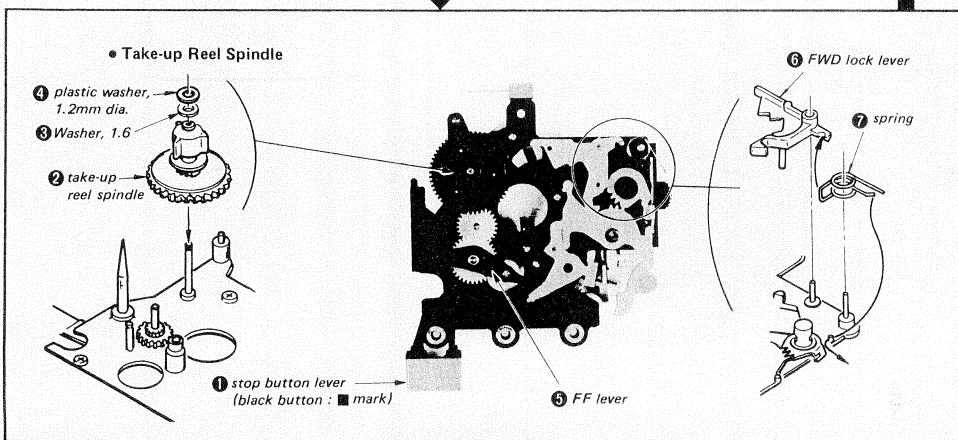
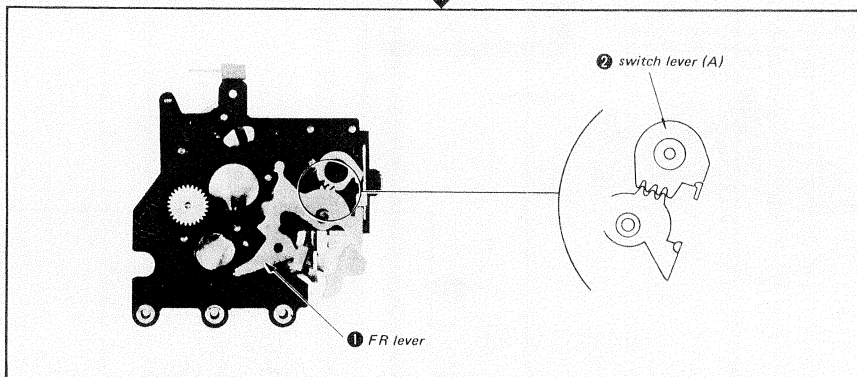
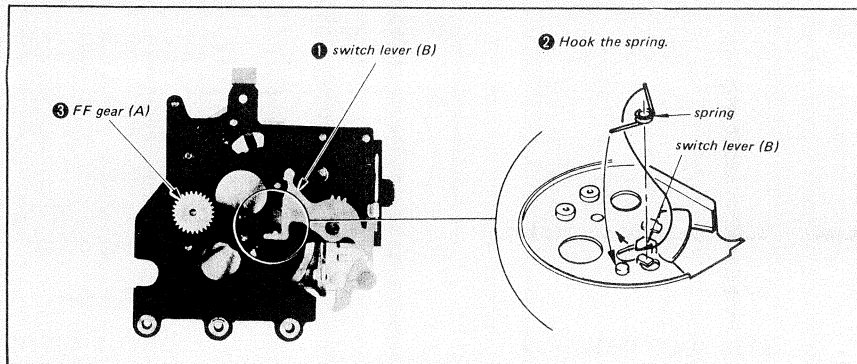
RETAINER

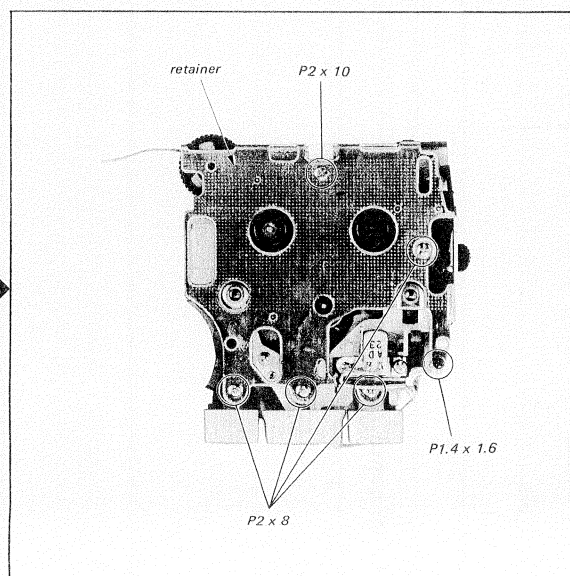
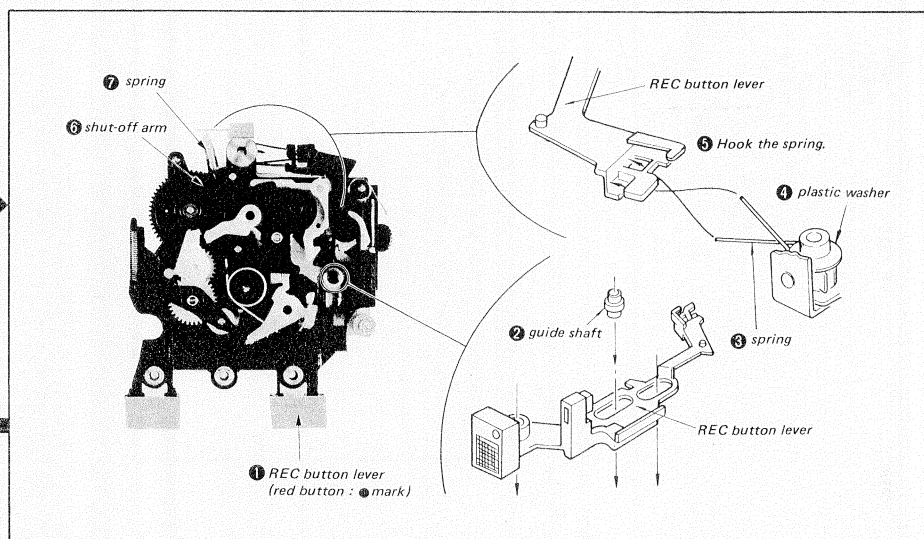


As for parts replacement of mechanism block, refer to page 4-6.

SECTION 2 REINSTALLATION

Note: Install the parts in the numeral order given.





SECTION 3 ADJUSTMENTS

3-1 MECHANICAL ADJUSTMENT

Torque Measurement

Power Voltage: 3V

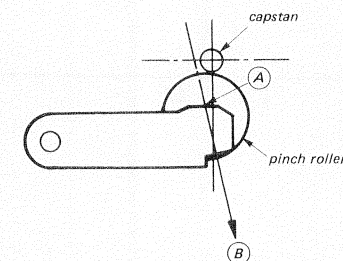
Mode	Torque meter (cassette type)	Torque
FWD	CQ-103M	4.5 – 11 g·cm (0.063 – 0.152 oz·inch)
FF	CQ-201M	15 – 50 g·cm
REW	CQ-201M	(0.208 – 0.691 oz·inch)

Pinch Roller Pressure Adjustment

— Play back Mode —

1. Hook the spring scale (300g) to the portion shown by the arrow (A).
2. Detach the pinch roller from the capstan in the direction shown by the arrow (B).
3. Slowly return the pinch roller and read the spring scale just when the pinch roller starts rotating.

Specification: 185 ± 20g



3-2. ELECTRICAL ADJUSTMENT

● See page 7, 8 for ELECTRICAL ADJUSTMENT.

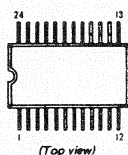
4-1. MOUNTING DIAGRAM

Note:

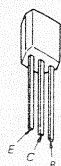
- ○ : parts extracted from the component side.
- ● : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- → : signal path

• Semiconductor Lead Layouts

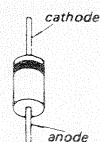
CX20107



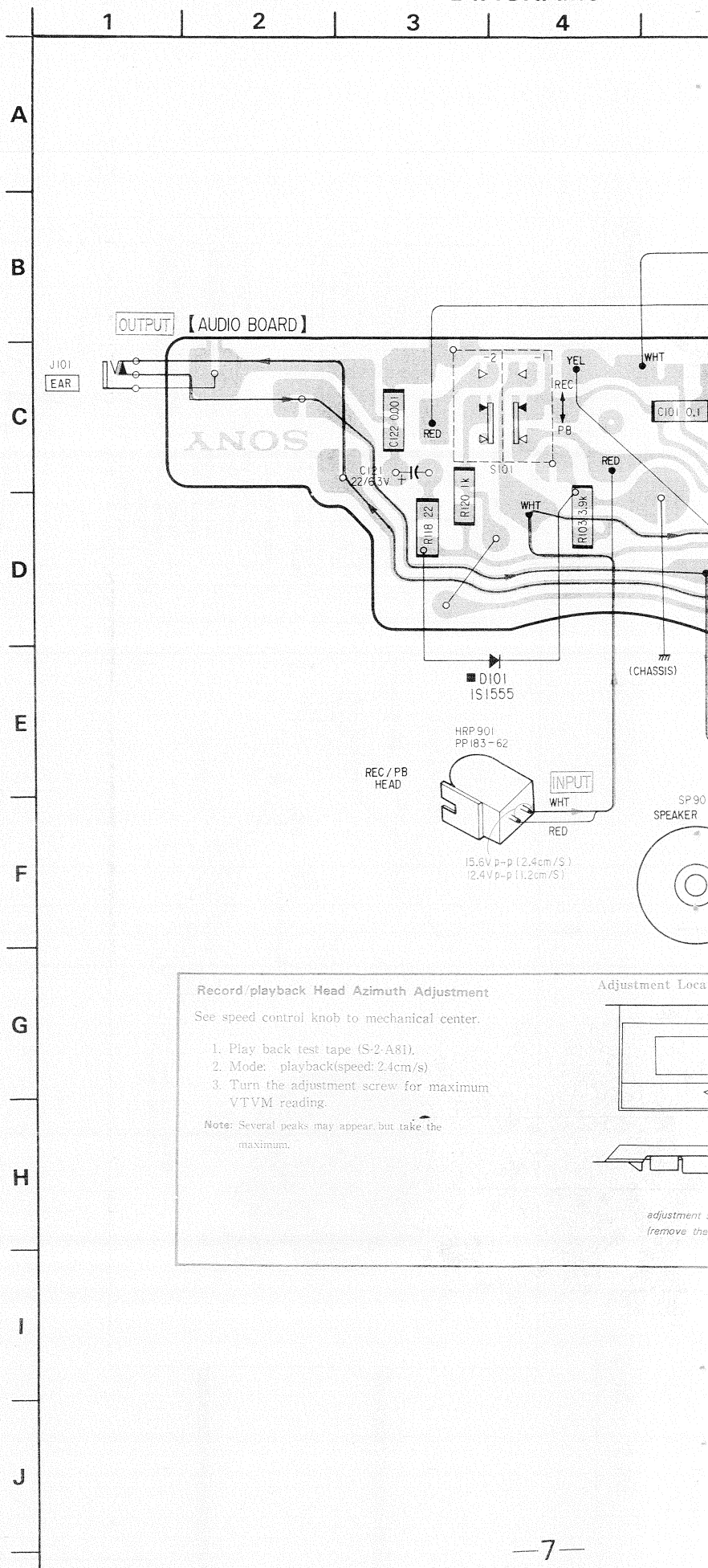
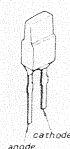
2SC536SP



1S1555



GL-9PR10



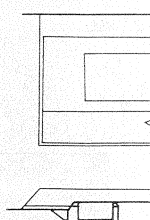
Record/playback Head Azimuth Adjustment

See speed control knob to mechanical center.

1. Play back test tape (S-2-A81).
2. Mode: playback(speed: 2.4cm/s)
3. Turn the adjustment screw for maximum VTVM reading.

Note: Several peaks may appear, but take the maximum.

Adjustment Location

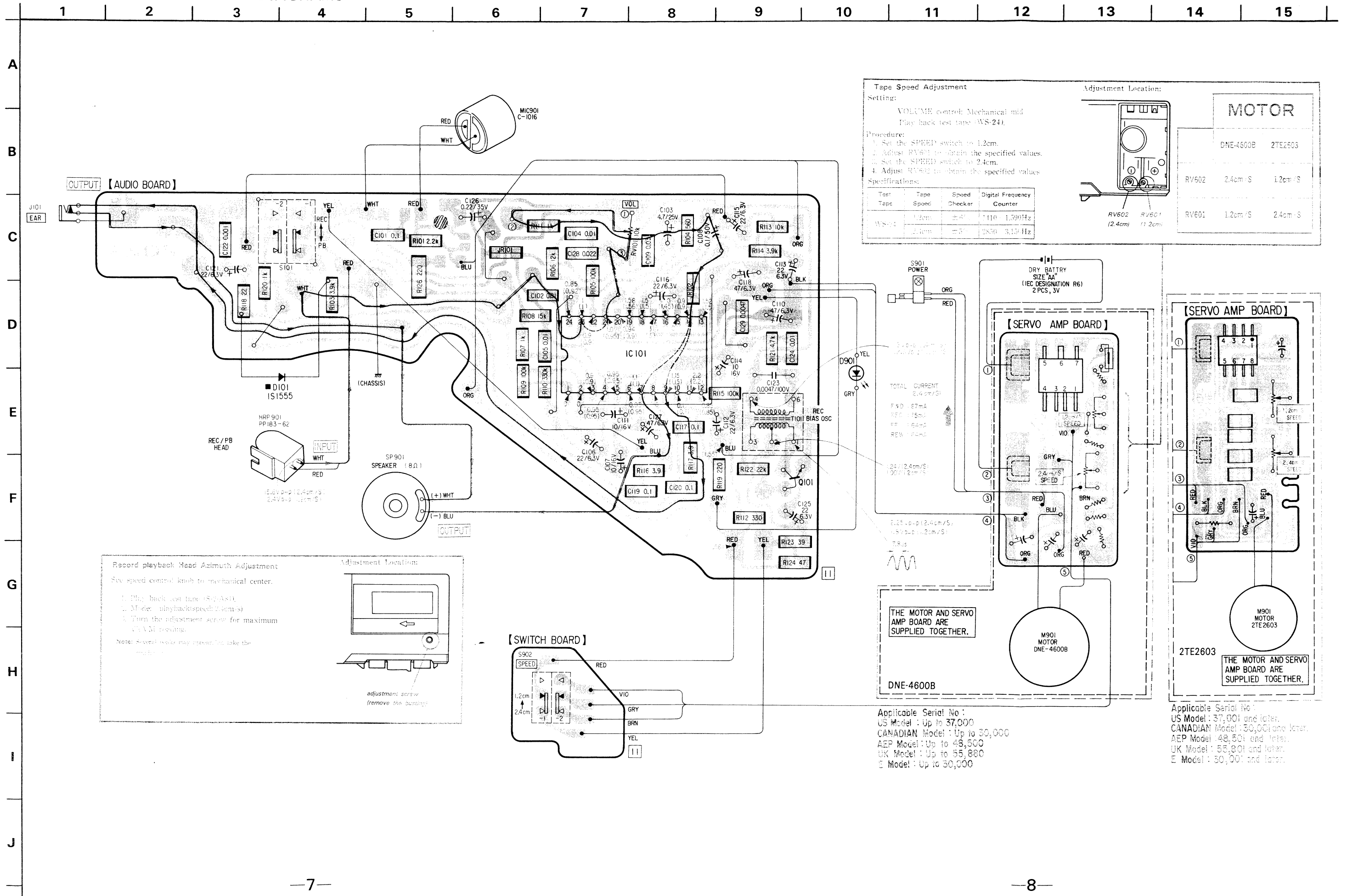


adjustment screw
(remove the cap)

SECTION 4 DIAGRAMS

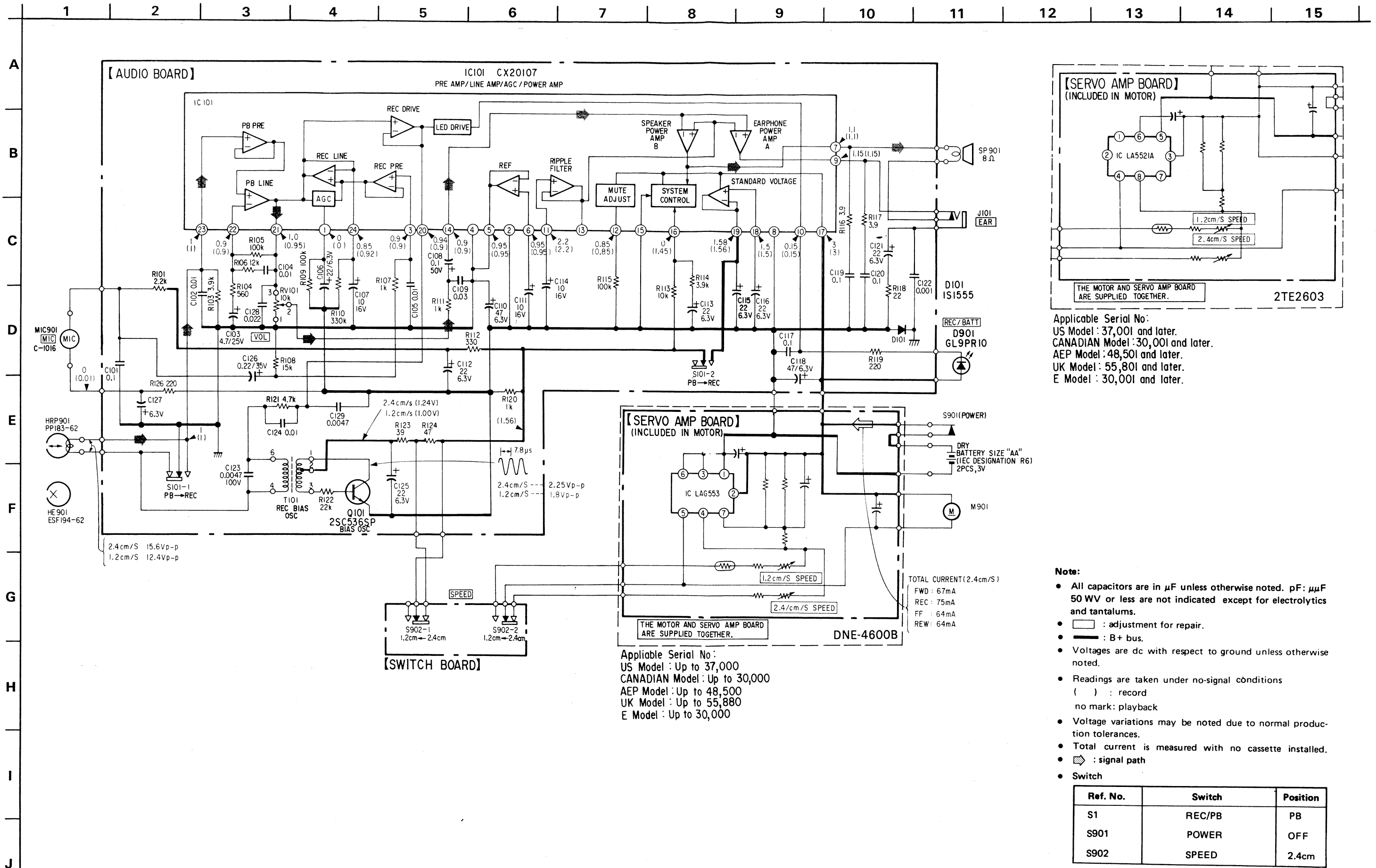
M-5 M-5

4-1. MOUNTING DIAGRAM



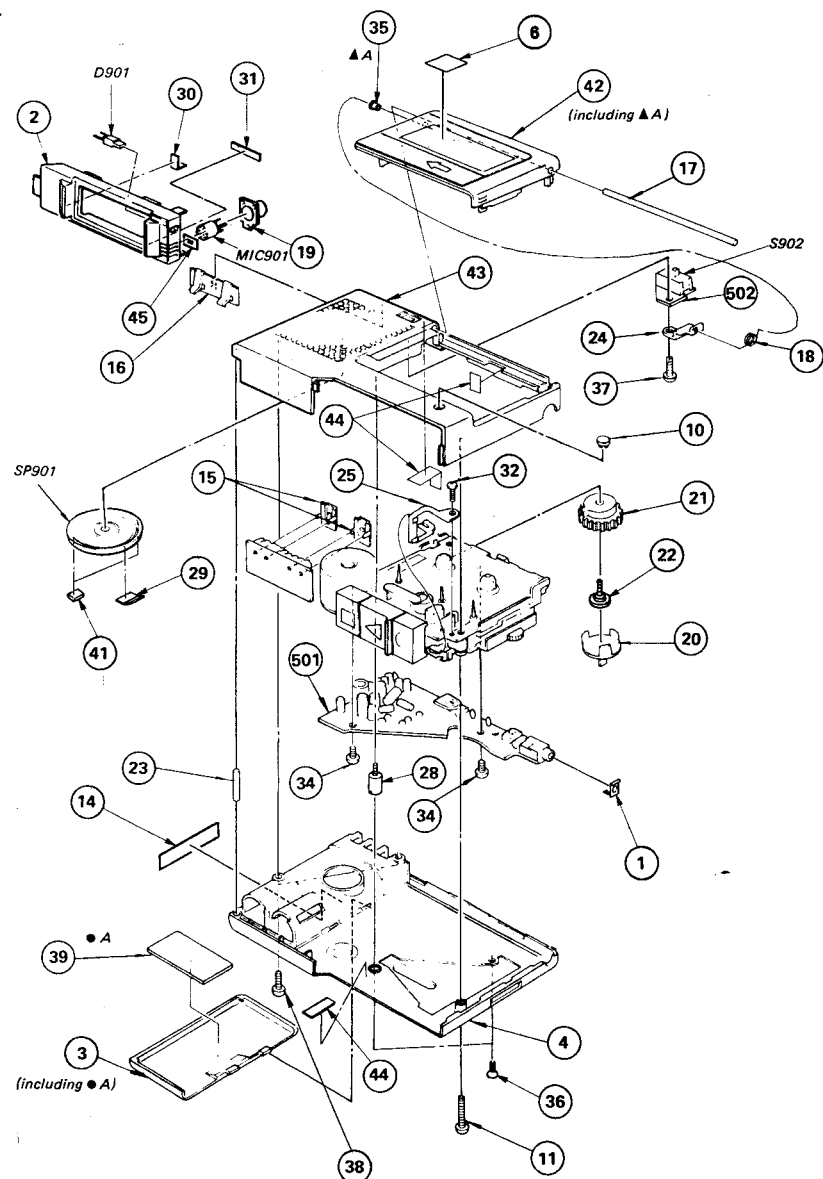
4-2. SCHEMATIC DIAGRAM

M-5 M-5

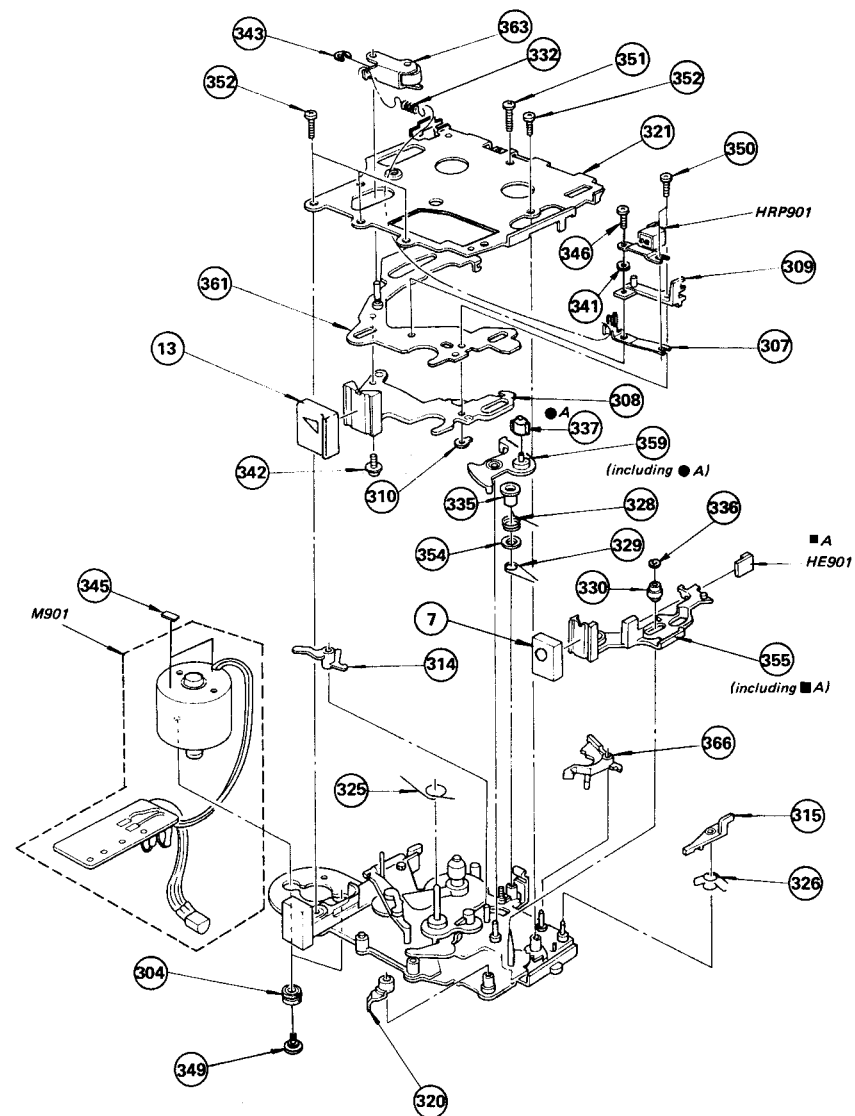


SECTION 5
EXPLODED VIEWS AND PARTS LIST

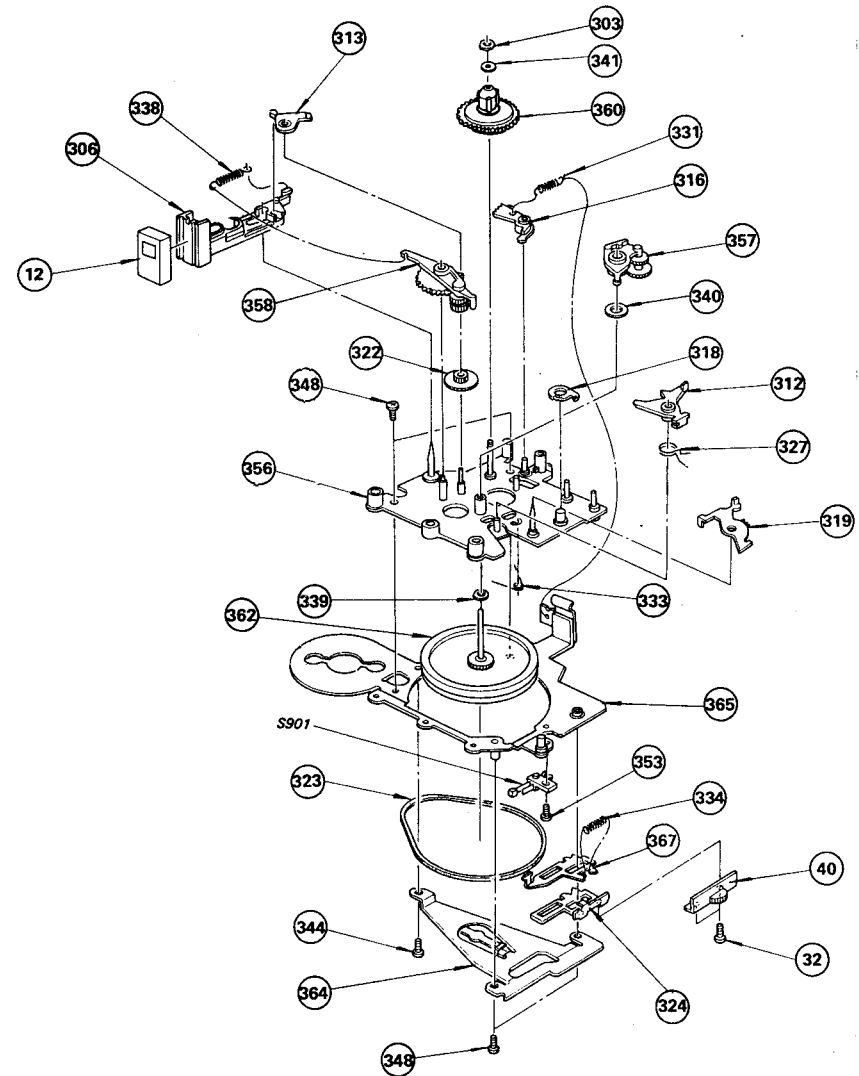
5-1.



5-2.



5-3.



NOTE:
The mechanical parts with no reference number in the exploded views are not supplied.
The construction parts of an assembled part are indicated with a collation number in the remark column.

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

GENERAL SECTION		
No.	Part No.	Description
1	*3-309-842-01	PLATE, JACK STRENGTH
2	3-309-807-00	PANEL, FRONT
3	X-3309-808-01 X-3309-807-1	(BLACK)....BATTERY LID (SILVER)....BATTERY LID
4	3-309-811-01 3-309-811-31	(SILVER)....CABINET (REAR) (BLACK)....CABINET (REAR)
6	3-703-710-01	STICKER, SONY SYMBOL (12)
7	3-309-822-00	BUTTON, REC
10	3-545-657-01	(SILVER)....BUSHING
10	3-545-657-11	(BLACK)....BUSHING
11	3-564-708-01 3-564-708-21	(SILVER)....SCREW, TAPPING +P 2X18 (BLACK)....SCREW, TAPPING +P 2X18
12	3-309-821-00	BUTTON, STOP
13	3-309-823-00	BUTTON, FWD
14	3-527-213-00	LABEL, SERIAL NUMBER
15	3-576-071-00	TERMINAL, BATTERY
16	3-576-074-00	SPRING
17	*3-576-075-00	SHAFT, CASSETTE HOLDER
18	3-576-077-00	SPRING
19	3-576-078-00	HOLDER, MICROPHONE
20	3-576-079-00	SHAFT, CONTROL
21	3-576-080-00	KNOB, CONTROL
22	3-309-835-01	SHAFT, FITTING, VOL KNOB
23	3-576-082-00	PIN, PARALLEL
24	3-576-088-00	RETAINER, SWITCH
25	*3-576-099-00	CLAMP
28	*3-579-122-00	BOSS
29	3-831-441-11	CUSHION (B)
30	3-831-441-XX	SPACER
31	3-831-441-XX	SPACER
32	3-331-047-11	SCREW, PRECISION +P 1.4X1.8 TYPE2
34	7-627-552-27	SCREW, PRECISION +P 1.7X2
35	*7-623-605-01	EYELET, 1.3X2.5
36	7-627-852-27	(SILVER)....SCREW, PRECISION +P1.7X3 TYPE3
37	7-627-852-28 7-685-103-19	(BLACK)....SCREW, PRECISION +P1.7X3 TYPE3 SCREW +P 2X5 TYPE2 NON-SLIT
38	7-685-103-19 7-685-103-14	(BLACK)....SCREW, TAPPING, +P 2X5 (SILVER)....SCREW, TAPPING, +P 2X5
39	9-911-815-01	STOPPER
40	3-576-056-00	BUTTON, FR
41	9-911-845-XX	CUSHION (A)

GENERAL SECTION		
No.	Part No.	Description
42	X-3309-805-1 X-3309-806-1	(BLACK)....HOLDER ASSY, CASSETTE (SILVER)....HOLDER ASSY, CASSETTE
43	3-309-834-01 3-309-834-31	(BLACK)....CABINET (FRONT) (SILVER)....CABINET (FRONT)
44	3-309-824-00	PLATE, SHIELD (B)
45	3-309-833-01	SHEET,ADHESIVE,MIC CUSHION
ACCESSORY & PACKING MATERIAL		
Part No.	Description	
1-504-059-11	(Canadian,AEP,UK,E)...EARPHONE, MAGNETIC	
3-309-828-01	CUSHION	
3-309-837-01	SPACER	
3-309-838-01	(US).....INDIVIDUAL CARTON	
3-309-841-01	(Canadian,AEP,UK,E)...INDIVIDUAL CARTON	
3-570-631-00	BAG, POLYETHYLENE	
3-576-110-00	STOPPER	
3-703-895-01	(AEP;BLACK)....LABEL, COLOR	
3-703-906-01	(AEP;SILVER)....LABEL, COLOR	
3-765-126-11	(AEP,UK,E).....MANUAL, INSTRUCTION	
3-765-126-21	(US,Canadian)....MANUAL, INSTRUCTION	
3-765-126-31	(Canadian).....MANUAL, INSTRUCTION	
3-765-126-41	(AEP,UK,E).....MANUAL, INSTRUCTION	
3-795-169-11	INSTRUCTION, STOPPER	
X-3576-020-1	(US).....STRAP ASSY	
X-3576-020-2	(Canadian,AEP,UK,E)...STRAP ASSY	

MECHANISM SECTION		
No.	Part No.	Description
303	3-570-615-00	POLY-WASHER (DIA.1.2)
304	3-570-770-00	CUSHION (A), MOTOR
306	3-576-041-00	LEVER, BUTTON, STOP
307	3-576-043-00	SPRING
308	3-576-044-00	LEVER, FWD BUTTON
309	3-576-046-00	GUIDE, TAPE
310	3-576-047-00	PLATE, STOPPER, TAPE GUIDE
312	3-576-051-00	LEVER, FR
313	3-576-052-00	LEVER (A), STOP
314	3-576-053-00	LEVER (B), STOP
315	3-576-054-00	LEVER, ERASING PROTECTION
316	3-576-055-00	ARM, S OFF
318	3-576-057-00	LEVER (A), SWITCH
319	3-576-058-00	LEVER (B), SWITCH
320	3-576-059-00	LEVER (C), SWITCH
321	3-576-060-21	RETAINER
322	3-576-061-00	GEAR (A), FF
323	3-576-062-00	BELT
324	3-576-064-00	PLATE, RELEASE, FR
325	3-576-065-00	SPRING
326	3-576-066-00	SPRING
327	3-576-067-00	SPRING
328	3-576-068-00	SPRING
329	3-576-069-00	SPRING
330	3-576-070-00	SHAFT (B), GUIDE, HEAD PC BOARD
331	3-576-090-00	SPRING, TENSION
332	3-576-091-00	SPRING, TENSION
333	3-576-092-00	SPRING
334	3-576-098-00	SPRING, COMPRESSION
335	3-576-100-00	STOPPER, SPRING
336	3-701-438-01	WASHER (t=0.13)
337	3-576-105-00	CLAW, S REEL
338	3-576-106-00	SPRING, TENSION
339	3-701-436-01	WASHER, 1.6
340	3-701-441-01	WASHER (t=0.13)
	3-701-441-11	WASHER (t=0.25)

MECHANISM SECTION		
No.	Part No.	Description
341	3-701-436-11	WASHER, 1.6
342	7-621-954-15	PMW 1.7X4
343	7-624-102-04	STOP RING 1.5, TYPE -E
344	7-627-450-28	+K 1.7X2
345	9-911-838-XX	SHEET, ERASING PROTECTION
346	7-627-551-27	SCREW, PRECISION +P 1.4X2.5
348	7-627-552-28	SCREW, PRECISION +P 1.7X2
349	3-309-836-01	SHAFT, FITTING, MOTOR
350	7-627-552-78	SCREW, PRECISION +P 1.7X3.5
351	7-627-553-77	SCREW, PRECISION +P 2X10
352	7-627-553-97	SCREW, PRECISION +P 2X8
353	7-627-850-98	+P 1.4X2.2
354	3-701-441-11	WASHER (t=0.25)
355	A-3164-204-A	LEVER ASSY, BUTTON, REC
356	X-3576-001-0	TABLE ASSY, BEARING
357	X-3576-002-0	ARM ASSY, FWD
358	X-3576-003-0	LEVER ASSY, FF
359	X-3576-004-0	TABLE ASSY, S REEL
360	X-3576-005-0	REEL ASSY, T
361	X-3576-006-0	CHASSIS ASSY, HEAD
362	X-3576-007-0	FLYWHEEL ASSY
363	X-3576-008-0	PINCH LEVER ASSY
364	*X-3576-009-0	PLATE ASSY, THRUST
365	*X-3576-010-0	BRACKET ASSY, MOTOR
366	X-3576-011-0	PLATE ASSY, LOCK, FWD
367	X-3576-012-0	PLATE ASSY, LOCK, FR

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:µF, PF:µµF.

RESISTORS

All resistors are in ohms.
F : nonflammable

COILS

MMH : mH, UH : µH

SEMICONDUCTORS

In each case, U : µ, for example:
UA....: µA...., UPA....: µPA...., UPC....: µPC,
UPD....: µPD....

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
501	*A-3215-946-A	PC BOARD ASSY, AUDIO		
501	*1-615-711-11	PC BOARD, AUDIO		
502	*1-604-186-00	PC BOARD, SWITCH		
C101	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C102	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C103	1-123-616-00	ELECT 4.7MF	20%	25V
C104	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C105	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C106	1-124-222-00	ELECT 22MF	20%	6.3V
C107	1-123-617-00	ELECT 10MF	20%	16V
C108	1-123-607-00	ELECT 0.1MF	20%	50V
C109	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V
C110	1-123-647-00	ELECT 47MF	20%	6.3V
C111	1-123-617-00	ELECT 10MF	20%	16V
C112	1-123-618-00	ELECT 22MF	20%	6.3V
C113	1-123-618-00	ELECT 22MF	20%	6.3V
C114	1-123-617-00	ELECT 10MF	20%	16V
C115	1-123-618-00	ELECT 22MF	20%	6.3V
C116	1-123-618-00	ELECT 22MF	20%	6.3V
C117	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C118	1-123-647-00	ELECT 47MF	20%	6.3V
C119	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C120	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C121	1-123-618-00	ELECT 22MF	20%	6.3V
C122	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C123	1-108-373-00	MYLAR 0.0047MF	10%	100V
C124	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C125	1-123-618-00	ELECT 22MF	20%	6.3V
C126	1-124-251-00	ELECT 0.22MF	20%	50V
C127	1-123-647-00	ELECT 47MF	20%	6.3V
C128	1-163-037-00	CERAMIC CHIP 0.022MF	10%	25V
C129	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
D101	8-719-815-55	DIODE 1S1555		
D901	8-719-909-10	DIODE GL-9PR10		
HE901	8-658-099-00	ESF194-62		
IC101	8-752-010-71	IC CX20107		
J101	1-507-720-00	JACK (EAR)		

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
JR101	1-216-295-00	METAL CHIP	0	5%	1/10W
JR102	1-216-295-00	METAL CHIP	0	5%	1/10W
M901	8-835-174-01	MOTOR, DC (2TE2603)			
MIC901	8-814-204-00	MICROPHONE, BUILT-IN (C-1016)			
Q101	8-729-853-63	TRANSISTOR 2SC536SP-G			
R101	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R103	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R104	1-216-043-00	METAL CHIP	560	5%	1/10W
R105	1-216-097-00	METAL CHIP	100K	5%	1/10W
R106	1-216-075-00	METAL CHIP	12K	5%	1/10W
R107	1-216-049-00	METAL CHIP	1K	5%	1/10W
R108	1-216-077-00	METAL CHIP	15K	5%	1/10W
R109	1-216-097-00	METAL CHIP	100K	5%	1/10W
R110	1-216-109-00	METAL CHIP	330K	5%	1/10W
R111	1-216-049-00	METAL CHIP	1K	5%	1/10W
R112	1-216-037-00	METAL CHIP	330	5%	1/10W
R113	1-216-073-00	METAL CHIP	10K	5%	1/10W
R114	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R115	1-216-097-00	METAL CHIP	100K	5%	1/10W
R116	1-216-306-11	METAL CHIP	3.9	5%	1/10W
R117	1-216-306-11	METAL CHIP	3.9	5%	1/10W
R118	1-216-009-00	METAL CHIP	22	5%	1/10W
R119	1-216-033-00	METAL CHIP	220	5%	1/10W
R120	1-216-049-00	METAL CHIP	1K	5%	1/10W
R121	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R122	1-216-081-00	METAL CHIP	22K	5%	1/10W
R123	1-216-015-00	METAL CHIP	39	5%	1/10W
R124	1-216-017-00	METAL CHIP	47	5%	1/10W
R126	1-216-182-00	METAL CHIP	220	5%	1/8W
RV101	1-228-121-00	RES, VAR, CARBON 10K			
S101	1-553-223-00	SWITCH, SLIDE (PB/REC)			
S901	1-553-226-00	SWITCH, LEAF (POWER)			
S902	1-553-601-00	SWITCH, SLIDE (SPEED)			
SP901	1-503-604-11	SPEAKER			
T101	1-433-207-00	TRANSFORMER, BIAS OSCILLATOR			

Sony Corporation

9-952-119-11

—16—